Rec'd PCT 11 OCT 2004

(12)特許協力条約に基づいて公開された国際出願

(19) 世界知的所有権機関
国際事務局

(43) 国際公開日
2003 年10 月16 日 (16.10.2003)

PCT

(10) 国際公開番号
WO 03/085688 A1

(51) 国際特許分類[7]: H01J 1/304, 29/04, 31/12, 9/02

(21) 国際出願番号: PCT/JP03/04196

(22) 国際出願日: 2003 年4 月2 日 (02.04.2003)

(25) 国際出願の言語: 日本語

(26) 国際公開の言語: 日本語

(30) 優先権データ:
特願2002-108983 2002 年4 月11 日 (11.04.2002) JP

(71) 出願人 (米国を除く全ての指定国について): ソニー株式会社 (SONY CORPORATION) [JP/JP]; 〒141-0001 東京都 品川区 北品川6丁目7番35号 Tokyo (JP).

(72) 発明者; および

(75) 発明者/出願人 (米国についてのみ): 伊藤 啓之 (ITOU,Hiroyuki) [JP/JP]; 〒141-0001 東京都 品川区 北品川6丁目7番35号 ソニー株式会社内 Tokyo (JP). 八木 貴郎 (YAGI,Takao) [JP/JP]; 〒141-0001 東京都 品川区 北品川6丁目7番35号 ソニー株式会社内 Tokyo (JP). 室山 雅和 (MUROYAMA,Masakazu) [JP/JP]; 〒141-0001 東京都 品川区 北品川6丁目7番35号 ソニー株式会社内 Tokyo (JP). 井上 誠 (INOUE,Makoto) [JP/JP]; 〒141-0001 東京都 品川区 北品川6丁目7番35号 ソニー株式会社内 Tokyo (JP).

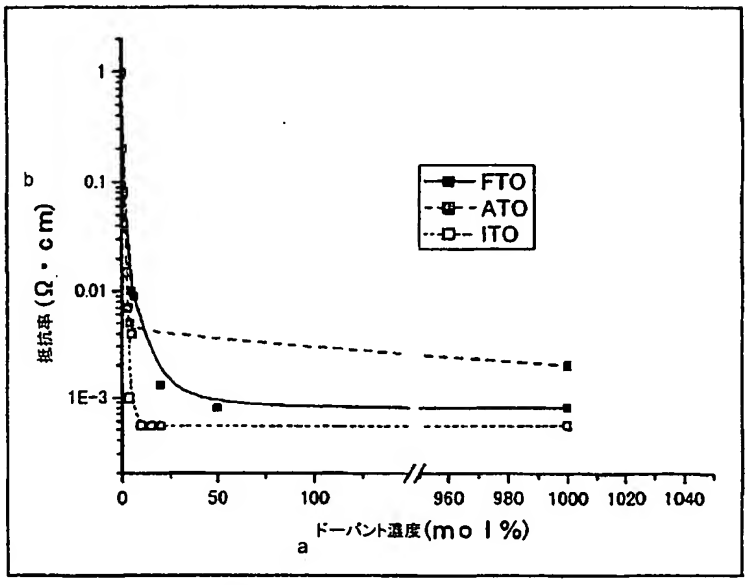
(74) 代理人: 中村 友之 (NAKAMURA,Tomoyuki); 〒105-0001 東京都 港区 虎ノ門1丁目2番3号 虎ノ門第一ビル9階 三好内外国特許事務所内 Tokyo (JP).

(81) 指定国 (国内): KR, US.

[続葉有]

(54) Title: FIELD ELECTRON EMISSION FILM, FIELD ELECTRON EMISSION ELECTRODE AND FIELD ELECTRON EMISSION DISPLAY

(54) 発明の名称: 電界電子放出膜、電界電子放出電極および電界電子放出表示装置



a...DOPANT CONCENTRATION (mol %)
b...RESISTIVITY (Ω·cm)

(57) Abstract: A field electron emission film, which comprises 0.001 to 40 wt % of a carbon nanotube structure and 0.01 wt % or more of a heat decomposition product obtained by the heat decomposition of a metal compound capable of being decomposed by heat. Metal compounds capable of being decomposed by heat include an organometallic compound, a metal salt and a metal complex. The field electron emission film is reduced in a residual gas, which results in the stability of the amount of emitted electrons, exhibits uniform resistance values within the surface thereof due to the reduced thickness thereof, has high smoothness, and exhibits high electron emitting characteristics.

[続葉有]

WO 03/085688 A1

10/511186
48 Rec'd PCT/PTO 11 OCT 2004

SUMMARY

It is a field electron emission film which is able to form a field electron emission film less in the amount of residual gas and stable in the amount of emitted electrons. Because it is formed in thin film, resistivity value of the film within the plane becomes even, and this is a field electron emission film having excellent smoothness, and higher electron emission property. Carbon nanotube structural body of 0.001 to 40 % by weight, and a heat decomposition product of 0.01 % by weight or more obtained by heat decomposition of a heat-decomposable metal compound are included. Organo-metallic compound, metal salt, organo-metallic salt compound and metal complex are preferable as the heat-decomposable metal compound.